

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listing, of the claims in the application:

Listing of the claims:

1. – 75. (Canceled)

76. (Currently Amended) A system method for analyzing the blood of profiling gene expression in a human test subject, the system method comprising:

a) ~~obtaining, for said test subject, data reflective of the expression in blood of each molecular marker related to a classifier generated according to the method of any of claims 1 or 37~~ measuring a level of expression in a blood sample of said test subject of each marker of a marker set consisting of HSPCA, IKBKAP, IL13RA1, LAMC1, MAFB and PF4, thereby obtaining a sample dataset; and

b) ~~applying said a classifier to said data sample dataset to thereby classify said test subject into a first trait subgroup or a second trait subgroup~~ class representing human subjects having mild osteoarthritis or a class representing human subjects not having osteoarthritis, wherein said classifier is able to discriminate between human subjects having mild osteoarthritis and human subjects not having osteoarthritis, and wherein said classifier is derived from data representing a level of expression of each marker of said marker set in blood samples of human subjects having mild osteoarthritis and in blood samples of human subjects not having osteoarthritis,

thereby profiling gene expression in a human test subject.

77. – 81. (Canceled)

82. (New) The method of claim 76, wherein said classifier is based on a multiple regression equation.

83. (New) The method of claim 76, wherein said classifier is identified as classifier 100000252.

84. (New) The method of claim 76, wherein said applying said classifier to said sample dataset comprises using a computer programmed to apply said classifier to a dataset representing a level of expression of each marker of said marker set in a blood sample of a human individual to thereby classify said human individual into said class representing human subjects having mild osteoarthritis or said class representing human subjects not having osteoarthritis.

85. (New) The method of claim 84, wherein said classifier is based on a multiple regression equation.

86. (New) The method of claim 84, wherein said classifier is identified as classifier 100000252.

87. (New) A method for profiling gene expression in a human test subject, the method comprising:

a) obtaining a sample dataset representing a level of expression in a blood sample of said test subject of each marker of a marker set consisting of HSPCA, IKBKAP, IL13RA1, LAMC1, MAFB and PF4; and

b) using a computer, applying a classifier to said sample dataset to thereby classify said test subject into a class representing human subjects having mild osteoarthritis or a class representing human subjects not having osteoarthritis, wherein said classifier is able to discriminate between human subjects having mild osteoarthritis and human subjects not having osteoarthritis, wherein said classifier is derived from data representing a level of expression of each marker of said marker set in blood samples of human subjects having mild osteoarthritis and in blood samples of human subjects not having osteoarthritis, and wherein said computer is programmed to apply said classifier to a dataset representing a level of expression of each marker of said marker set in a blood sample of a human individual to thereby classify said test individual into said class representing human subjects having mild osteoarthritis or said class representing human subjects not having osteoarthritis, thereby profiling gene expression in a human test subject.

88. (New) The method of claim 87, wherein said classifier is based on a multiple regression equation.

89. (New) The method of claim 87, wherein said classifier is identified as classifier 100000252.

90. (New) The method of claim 87, wherein said obtaining said sample dataset comprises measuring said level of expression of each marker of said marker set in said blood sample of said test subject.

91. (New) The method of claim 90, wherein said classifier is based on a multiple regression equation.

92. (New) The method of claim 90, wherein said classifier is identified as classifier 100000252.

93. (New) A method for profiling gene expression in a human test subject, the method comprising:

using a computer, applying a classifier to a sample dataset representing a level of expression in a blood sample of said test subject of each marker of a marker set consisting of HSPCA, IKBKAP, IL13RA1, LAMC1, MAFB and PF4, to thereby classify said test subject into a class representing human subjects having mild osteoarthritis or a class representing human subjects not having osteoarthritis,

wherein said classifier is able to discriminate between human subjects having mild osteoarthritis and human subjects not having osteoarthritis,

wherein said classifier is derived from data representing a level of expression of each marker of said marker set in blood samples of human subjects having mild osteoarthritis and in blood samples of human subjects not having osteoarthritis, and

wherein said computer is programmed to apply said classifier to a dataset representing a level of expression of each marker of said marker set in a blood sample of a human individual to thereby classify said human individual into said class representing human subjects having mild osteoarthritis or said class representing human subjects not having osteoarthritis,

thereby profiling gene expression in a human test subject.

94. (New) The method of claim 93, wherein said classifier is based on a multiple regression equation.

95. (New) The method of claim 93, wherein said classifier is identified as classifier 100000252.

96. (New) The method of claim 93, further comprising obtaining said sample dataset by measuring said level of expression of each marker of said marker set in said blood sample of said test subject, prior to applying said classifier to said sample dataset.

97. (New) The method of claim 96, wherein said classifier is based on a multiple regression equation.

98. (New) The method of claim 96, wherein said classifier is identified as classifier 100000252.